

## CLAIMS

What is claimed is:

1. A wafer fabrication system, comprising:  
a power source coupled to a plasma system by circuitry;  
wherein the endpoint for plasma etching is determined by measuring  
the voltage across an element of said circuitry.
2. The system of Claim 1, wherein said element is a resistor.
3. The system of Claim 1, wherein said circuitry includes impedance  
matching circuitry.
4. The system of Claim 1, wherein said voltage is a DC voltage  
corresponding to a DC voltage within the plasma system where  
said plasma etching occurs.
5. A wafer fabrication system, comprising:  
a plasma system for etching a material within said plasma system;  
circuitry coupled to said plasma system;  
wherein said etching ends when a voltage across an element  
external to said plasma system undergoes a predetermined  
change.
6. The system of Claim 5, wherein said element is a resistor.

7. The system of Claim 5, wherein said voltage is a DC voltage corresponding to a DC voltage within the plasma system.
8. A method of endpoint detection in a plasma etching system, said system having an RF power source coupled to a plasma chamber by a matching network, comprising the actions of:  
monitoring a voltage across an element in said matching network;  
5                      and  
changing etching parameters when said voltage undergoes a predetermined change.
9. The method of Claim 8, wherein said voltage is a DC voltage corresponding to a DC voltage in said plasma chamber.
10. The method of Claim 8, wherein said element is a resistor.
11. The method of Claim 8, wherein said predetermined change is a voltage drop of not less than 5%.
12. A method of endpoint detection in plasma etching, comprising the actions of:  
measuring voltage across a plasma system by measuring a voltage difference across an element that is external to said plasma  
5                      system; and  
stopping etch when said voltage decreases a predetermined amount within a predetermined time.

13. The method of Claim 12, wherein said element is a resistor.
14. The method of Claim 12, wherein said voltage is a DC voltage.
15. The method of Claim 12, wherein said predetermined amount is a voltage drop of not less than 5% and said predetermined time is not less than 3 seconds.
16. A method of endpoint detection in plasma etching, comprising the actions of:
- measuring the voltage across a resistor, said voltage sensitive to changes within the plasma system where said plasma etching occurs;
- 5 halting said etching based on a change in said voltage.
17. The method of Claim 16, wherein said resistor is part of impedance matching circuitry between said plasma system and a power source.
18. The method of Claim 16, wherein said voltage is a DC voltage.